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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,370	08/16/2001	Stephen M. Dawson	16409/93578-00	3595

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EXAMINER
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HO, THOMAS Y

ART UNIT	PAPER NUMBER
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3677

DATE MAILED: 10/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/931,370

Applicant(s)

DAWSON ET AL.

Examiner

Thomas Y Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5,9-12 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5,9-12 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 9-12, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson USPN5730447 (hereinafter Dawson447) in view of Fedorovich USPN6485022 (hereinafter Fedorovich022).

As to claim 1, Dawson447 discloses a device for sealing a rotatable shaft 2 and a fixed housing 1, said device comprising an annular stator 5 and an annular rotor 3, said stator 5 having a seal means 25 for forming a seal with said housing 1, said rotor 3 having a seal means 9 for forming a seal with said shaft 2, said rotor 3 and said stator 5 each having contact faces 16,17, and at least one magnet 13,14 urging said rotor contact face 17 to re-engage said stator contact face 16 during said separation. The difference between the claim and Dawson447 is the claim recites said device having a means for mechanically coupling said rotor to said stator and for permitting said rotor moves to move axially independently of said stator within a predetermined range of separation between said rotor and said stator within said mechanical coupling.

Fedorovich022 discloses a device having a stator and rotor similar to that of Dawson447. In addition, Fedorovich022 further teaches a means for mechanically coupling 38,72 said rotor 30 to said stator 50 (see Figure 4) and for permitting said rotor 30 to move axially independently of said stator 50 within a predetermined range of separation between said rotor 30 and said stator 50

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within said mechanical coupling 38,72 (col.3, ln.25-45; col.4, ln.1-20). It would have been obvious to one of ordinary skill in the art, having the disclosures of Dawson447 and Fedorovich022 before him at the time the invention was made, to modify the rotor and stator of Dawson447 to include a means for mechanically coupling of Fedorovich022, to obtain a device having a unitized stator and rotor that allows for axial movement between stator and rotor. One would have been motivated to make such a combination because the ability to interlock the stator and rotor at a preset/fixed spacing would be achieved, and the problem of the ring members being separated by high pressure sprays would be addressed, as taught by Fedorovich 022 (col.1, ln.30-45; col.2, ln.5-10; col.4, ln.1-20).

As to claim 2, Dawson447 discloses a device for sealing a rotatable shaft 2 and a fixed housing 1, said device comprising an annular stator 5 and an annular rotor 3, said stator 5 having a seal means 25 for forming a seal with said housing 1, said rotor 3 having a seal means 9 for forming a seal with said shaft 2, said rotor 3 and said stator 5 each having contact faces 16,17, and at least one magnet 13,14 urging said rotor contact face 17 to re-engage said stator contact face 16 during said axial sliding of said rotor 3. Fedorovich022 teaches said device having a means for mechanically coupling 38,72 said stator 50 and said rotor 30 to allow and for permitting said rotor to axially slide along said shaft within said mechanical coupling (col.4, ln.1-20).

As to claim 3, Fedorovich022 teaches where said means for mechanically coupling 38,72 includes an interlocking flange 72 and annular groove 38, said flange 72 positioned on one of said rotor 30 or said stator 50, said annular groove 38 positioned on the other of said rotor 30 or said stator 50.

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As to claim 4, Fedorovich022 teaches where said annular groove (unnumbered; grooved formed between 72 and 76 in Figure 5) is positioned on said stator 50 and said flange 36 is positioned on said rotor 30. This offers an alternative interpretation of the means for mechanically coupling that also reads on the claims.

As to claim 5, Fedorovich022 teaches where said annular groove 38 is positioned on said rotor 30 and said flange 72 is positioned on said stator 50.

As to claim 9, Dawson447 discloses a device for sealing a rotatable shaft 2 and a fixed housing 1, said device comprising an annular stator 5 and an annular rotor 3, said stator 5 having a seal means 25 for forming a seal with said housing 1, said rotor 3 having a seal means 9 for forming a seal with said shaft 2, said rotor 3 and said stator 5 each having contact faces 16,17, and at least one magnet 13,14 urging said rotor contact face 17 to re-engage said stator contact face 16 during movement of said rotor 3. Fedorovich022 teaches said device having an annular groove 38 positioned on one of said stator 50 or said rotor 30, and a flange 72 positioned on the other of said stator 50 or said rotor 30, wherein said annular groove 38 and said flange 72 are engaged with one another to mechanically couple said rotor 30 to said stator 50, and wherein said engagement establishes a predetermined distance within which said rotor may move axially independently of said stator (col.4, ln.1-20).

As to claim 10, Dawson447 discloses having a plurality of magnets 13,14.

As to claim 11, Fedorovich022 teaches wherein said flange72 and said annular groove 38 have substantially complementary cross-sectional profiles. The fact that applicant's device allows for relative movement indicates that there are gaps for axial play between the means for coupling between stator and rotor. These gaps preclude the possibility of having exactly

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complementary shapes between the flange and groove, because complementary is commonly defined as mutually supplying each other's lack, or serving to fill out or complete (Merriam Webster Online Dictionary). Applicant claims "substantially" complementary, which allows for the gaps, and Fedorovich022 also has gaps, but can also be interpreted as "substantially" complementary.

As to claim 12, Dawson447 discloses said rotor 3 slides along said shaft 2 to accommodate unlimited axial shaft movement within said rotor 3.

As to claim 17, Fedorovich022 teaches wherein said means for mechanically coupling 38,72 said rotor 30 to said stator 50 forms a labyrinth.

As to claim 18 Fedorovich022 teaches wherein said means for mechanically coupling 38,72 said rotor 30 to said stator 50 forms a labyrinth.

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dawson USPN5730447 in view of Fedorovich USPN6485022, and further in view of Fedorovich USPN5967524 (hereinafter Fedorovich524), and cited case law.

As to claim 15 Dawson447 discloses wherein said rotor 3 is made of metal (col.3, ln.50-60). The difference between the claims and Dawson447 is the claims recite wherein said rotor is constructed substantially of a semiflexible heat-resistant material. Fedorovich524 discloses a seal device similar to that of Dawson447. In addition, Fedorovich524 further teaches a rotor 14 made of PTFE or PTFE alloy (known to be semiflexible and heat-resistant to varying degrees) or suitable metal (col.3, ln.35-40). It would have been obvious to one of ordinary skill in the art, having the disclosures of Dawson447 and Fedorovich524 before him at the time the invention was made, to modify the material of the rotor in Dawson447 to be made of PTFE or a PTFE

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alloy, as in Fedorovich524, to obtain a rotor made of a semiflexible heat-resistant material. One would have been motivated to make such a combination because the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Furthermore, Fedorovich524 teaches the equivalency of PTFE/PTFE alloys and suitable metals, and inasmuch as the references disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the exercise art to substitute one for the other. In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

As to claim 16, Fedorovich524 teaches wherein said rotor is constructed substantially of a semiflexible heat-resistant material (col.3, ln.35-40).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-5, 9-12, 15-18 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

USPN4890941 to Calafell discloses a bearing protector with slinger ring.

USPN5026252 to Hoffelner discloses a sealing device for turbo engines and the like.

USPN5161804 to Orlowski discloses a magnetic seal.

USPN5181728 to Stec discloses a trenched brush seal.

USPN5498006 to Orlowski discloses a pinned unitary bearing seal.

USPN6182972 to Orlowski discloses a unitary bearing seal.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Y Ho whose telephone number is (703)305-4556. The examiner can normally be reached on M-F 10:00AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J Swann can be reached on (703)306-4115. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-1113.

TYH

  
**ROBERT J. SANDY**  
**PRIMARY EXAMINER**